

CLAIMS

We claim:

1. A method for bonding a first and a second optical parts, the method comprising:
 - positioning the first optical part from a substrate by a small gap;
 - after the first optical part is aligned with the second optical part,
 - sliding two wedges respectively towards the first optical part from two directions till respective contacts with the first optical part are established;
 - applying a small amount of bonding agent to the respective contacts to secure positions of the first optical part with respect to the substrate.
2. The method of Claim 1 further comprising fastening the wedges to the substrate so as to form a whole optical device or part of an optical device.
3. The method of Claim 2, wherein each of the wedges has a cross-section shaped substantially like a right triangle having a hypotenuse thereof.
4. The method of Claim 3, wherein the sliding of the two wedges respectively towards the first optical part from the two directions comprises facing down a sliding side of each of the wedges, wherein the sliding side includes the hypotenuse; and pushing each of the wedges slowly towards the first optical part.

5. The method of Claim 3, wherein each of the wedges is so shaped that the sliding of the two wedges respectively towards the first optical part from the two directions will not flip over or up the first optical part that has been already aligned with the second optical part.
6. The method of Claim 5, wherein the first optical part is an optical collimator.
7. The method of Claim 1, wherein the two directions are so decided that the two wedges, after slid in, can hold up positions of the first optical part.
8. A method for bonding a first and a second optical parts, the method comprising:
 - positioning the first and the second optical parts from a substrate by a small gap;
 - after the first and the second optical parts are aligned with each other, sliding two wedges respectively towards each of the first and the second optical parts from two directions till respective contacts with the each of the first and the second optical parts are established; and
 - applying a small amount of bonding agent to the respective contacts to fasten respective positions of the first and the second optical parts.

9. The method of Claim 8 further comprising fastening the two wedges for each of the first and the second optical parts to the substrate.
10. The method of Claim 9, wherein each of the wedges has a cross-section shaped substantially like a right triangle having a hypotenuse thereof so that each of the wedges has a sliding side on the hypotenuse.
11. The method of Claim 9, wherein the sliding of the two wedges respectively towards each of the first and the second optical parts from two directions comprises facing down the sliding side of each of the wedges; and pushing each of the wedges slowly towards the each of the first and the second optical parts.
12. The method of Claim 8, wherein each of the wedges is so shaped that the sliding of the two wedges respectively towards each of the first and the second optical parts will not flip over or up the each of the first and the second optical parts that has been already aligned, when being pushed to slide in.
13. The method of Claim 12, wherein each of the wedges has a cross-section shaped substantially like a right triangle.
14. The method of Claim 8, wherein the two directions are so decided that the two wedges, after slid in, can hold up positions of the each of the first and the second optical parts.

15. An optical apparatus comprising:

a first and a second optical parts, both aligned with each other to ensure that optical signals can pass through as desired;
two wedges respectively slid in from two different directions and stationed to hold up positions of the first optical part when a bonding agent is applied to contacts between the first optical part and the two respective wedges; and
a substrate supporting the two wedges by bonding the two wedges thereto.

16. The optical apparatus of Claim 15, wherein each of the wedges has a cross-section shaped substantially like a right triangle having a hypotenuse thereof so that each of the wedges has a sliding side on the hypotenuse.

17. The optical apparatus of Claim 16, wherein each of the two wedges has the sliding side facing the substrate.

18. The optical apparatus of Claim 15, wherein the two directions are so decided that the two wedges, after slid in, can hold up positions of the first optical part.

19. The optical apparatus of Claim 15, wherein the wedges are not identical and one of the wedges is integrated with another part in the optical apparatus.

Year	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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